

- 1 What is claimed is:
- 2 1. A method for making a package substrate comprising the steps of:
- 3 providing a substrate having a top surface and a bottom surface;
- 4 forming at least a through slot passing through the top surface and the bottom surface
- 5 of the substrate so as to form a plurality of side walls inside the through slot and a
- 6 die-cavity portion;
- 7 forming a metal layer on the top surface of the substrate and the side walls inside the
- 8 through slot;
- 9 forming an anti-etching layer on the top surface of the substrate and the die-cavity
- 10 portion for sealing the through slot;
- 11 patterning the anti-etching layer;
- 12 etching the metal layer on the top surface of the substrate to form a circuit pattern
- 13 under the anti-etching layer, the anti-etching layer preventing the metal layer on the
- 14 side walls of the through slot from etched;
- 15 removing the anti-etching layer; and
- 16 removing the die-cavity portion of the substrate to form a die-cavity of the substrate
- 17 having the metal layer on the side walls.
- 18 2. The method in accordance with claim 1, wherein the anti-etching layer is a
- 19 photosensitive dry film.
- 20 3. The method in accordance with claim 1, wherein the through slot has a width between
- 21 0.1mm and 4.0 mm.
- 22 4. The method in accordance with claim 1, wherein the metal layer on the side walls is
- 23 in discontinuous configuration after the step of removing the die-cavity portion.
- 24 5. The method in accordance with claim 1, wherein the through slot is a linear slot.
- 25 6. The method in accordance with claim 1, wherein the through slot is a L-shaped slot.
- 26 7. The method in accordance with claim 1, further comprising a step of forming an
- 27 insulation cover layer on the circuit pattern layer.

- 1 8. The method in accordance with claim 1, further comprising a step of forming a
2 surface treating layer on the metal layer.
- 3 9. A method for making a package substrate comprising the steps of:
4 providing a substrate having a top surface and a bottom surface, the top surface
5 including a die-cavity region;
6 forming at least a slot around the die-cavity region so as to form a plurality of side
7 walls inside the slot and a die-cavity portion within the die-cavity region, wherein the
8 die-cavity portion is integrally connected with the substrate;
9 forming a metal layer on the top surface of the substrate and the side walls;
10 forming an anti-etching layer on the top surface of the substrate and the die-cavity
11 portion for sealing the slot;
12 patterning the anti-etching layer;
13 etching the metal layer on the top surface of the substrate, the anti-etching layer
14 preventing the metal layer on the side walls of the through slot from be etched;
15 removing the anti-etching layer; and
16 removing the die-cavity portion of the substrate to form a die-cavity of the substrate
17 having the metal layer on the side walls.
- 18 10. The method in accordance with claim 9, wherein the anti-etching layer is a
19 photosensitive dry film.
- 20 11. The method in accordance with claim 9, wherein the slot has a width between 0.1mm
21 and 4.0 mm.
- 22 12. The method in accordance with claim 9, wherein the metal layer on the side walls is
23 in discontinuous configuration after the step of removing the die-cavity portion.
- 24 13. The method in accordance with claim 9, wherein the slot is a linear slot.
- 25 14. The method in accordance with claim 9, wherein the slot is a L-shaped slot.
- 26 15. The method in accordance with claim 9, further comprising a step of forming an
27 insulation cover layer on the circuit pattern layer.

- 1 16. The method in accordance with claim 9, further comprising a step of forming a
2 surface treating layer on the metal layer.
- 3 17. A method for making a package substrate comprising the steps of:
4 providing a substrate having a top surface and a bottom surface, the top surface
5 including a die-cavity region;
6 firstly routing the substrate to form a plurality of slots around the die-cavity region so
7 as to form a die-cavity portion integrally connected with the substrate within the
8 die-cavity region;
9 forming a metal layer in the slots; and
10 secondly routing the substrate to connect the slots in a manner that the die-cavity
11 portion is separated from the substrate.
- 12 18. The method in accordance with claim 17, wherein the slots have a width between
13 0.1mm and 4.0 mm.
- 14 19. The method in accordance with claim 17, wherein the slots are linear slots.
- 15 20. The method in accordance with claim 17, wherein the slots are L-shaped slots.
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